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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,662	04/21/2004	Shuhei Kitano	3824-032373	4928

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EXAMINER

YEE, DEBORAH

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/828,662	Applicant(s) KITANO, SHUHEI	
	Examiner Deborah Yee	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 7 recites a Si content of 0.59 to 0.9% which is broader than its parent claim 6 Si range of 0.64 to 1.0%.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 to 4 and 6 to 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujiura et al (US Patent 6,372,057), Japanese patent 410317095 or Japanese patent 411131176.

4. Fujimura in claims 1 and 2, the English abstract of JP'095 or JP'176, each disclose a steel alloy having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap renders applicant's composition prima facie obvious because it would be obvious to one of ordinary skill in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art

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teaches similar utility (hub, joint, machine parts) and similar high strength and machining properties, see MPEP 2144.05.

5. Similar to dependent claims, Fujimura on lines 5 to 17 in column 5 discloses casting and forging and forming wheel blanks comprising a hub, a rim and connecting plate (joint) followed by slow cooling and then reheating and quenching hardening and machining. Also although specific examples are not disclosed, the prior art still teaches a steel alloy having a composition with broad wt% ranges wherein examples within the prior art wt% ranges would closely suggest the present invention and when calculated, satisfy the C_{eq} value recited by one or more of the dependent claims.

6. The English abstract of JP'095 discloses induction hardened steel components suitable for parts for machine structures such as joints which would meet claim 4. Also machine part would broadly include a hub since it is also considered a forged machined part. Moreover, prior art example 4 in Table 1 on page 4 closely meets the claimed composition and has a C_{eq} of 0.88 and is within the C_{eq} range recited by dependent claims.

7. The English abstract of JP'176 discloses an induction hardened forged machine part with improved machinability and hence would broadly include a hub or joint as recited by one or more claims since they are considered to be in the category of forged and machined parts. Moreover, the tables on pages 8 and 9 disclose specific examples which meet or closely meet the claimed composition and C_{eq} values recited in dependent claims.

Response to Arguments

8. Applicant's arguments filed March 30, 2006 have been fully considered but they are not persuasive.

9. It was pointed out that JP'176 alloy contains 0.019 to 0.05% Al whereas present invention alloy does not contain Al, and any Al would be excluded by the transitional phrase "consisting essentially of". Applicant submitted that the presence of Al tends to create a chemical bond with oxygen to form alumina, as an intercalated nucleus, whereby the resultant steel is liable to cause fracture. It is examiner's position that this is merely applicant's statement without any convincing evidence. Hence Al at 0.019 to 0.05% would not appear to affect the basic and novel characteristics of the present invention and therefore not be excluded by "consisting essentially of".

10. Applicant stated that JP'176 fails to disclose an improvement in machinability and teaches that Si tends to deteriorate machinability when it exceeds 1.8%. It is the examiner's position that the English abstract of JP'176 discloses producing a machine part having equal or better machinability. Moreover, prior art Si range of 0.5 to 1.8% encompasses applicant's range of 0.5 to 0.90% , and also discloses specific examples that fall within applicant's Si range. Hence claims would not patentably distinguish over prior art.

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11. It was submitted that JP'095 teaches a negative teaching as to the function of Si on the improvement of machinability. Regardless of the different Si use, it is the examiner's position that JP'095 still teaches a broad Si range of 0.01 to 1.0% Si that overlaps with claimed Si range. Moreover JP'095 example 4 in table 1 on page 4 contains 0.6% Si and is within applicant's claimed Si range of 0.5 to .9%.

12. It was submitted that JP'095 examples all contain above 1% Mn whereas the present invention requires 0.5 to 1.0% Mn because above 1.0% Mn would reduce the amount of proeutectoid ferrite resulting in a significant reduction in machinability. It is examiner's that this merely applicant's statement with no convincing evidence. To distinguish claims over prior art, comparative test data would be needed to establish criticality of the upper Mn limit of 1.0%.

13. Also JP'095 alloy contains Al which would not be excluded by claims reciting "consisting essentially of" for the reasons set forth in paragraph 9.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not


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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Deborah Yee
Primary Examiner
Art Unit 1742

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